

WHAT IS CLAIMED IS:

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1. A receiver for receiving a multi-band signal modulated using an inverse discrete Fourier transform, comprising:
- 5 a plurality of demodulators, each demodulator for demodulating a respective one of a plurality of bands in the multi-band signal, wherein each demodulator includes a discrete Fourier transform.
2. The receiver of claim 1 wherein the process speed of each demodulator is determined by the respective frequency band.
3. The receiver of claim 1 wherein each demodulator further includes an equaliser connected to the output of the discrete Fourier transform.
- 15 4. The receiver of claim 1 wherein each demodulator further includes a filter for filtering the received signal prior to the discrete Fourier transform.
5. A transceiver including a receiver according to claim 1.
- 20 6. The transceiver of claim 5 in which each demodulator includes an echo canceller for removing an echo associated with a signal in a transmitter of the transceiver from the received signal.
- 25 7. The transceiver of claim 6 in which the echo canceller is connected to remove the echo at the input to the discrete Fourier transform.
8. The transceiver of claim 6 in which each echo canceller comprises an adaptive filter.

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9. 10. The receiver of claim 1 in which the multi-band signal is generated by nulling selected tones in the modulator.
10. 11. The receiver of claim 1 in which the multi-band signal is generated by filtering the output of the modulator.
11. 12. A method of demodulating a multi-band signal modulated using an inverse discrete Fourier transform comprising the step of:
providing a demodulator for each respective band of the multi-band signal
10 wherein each demodulator performs a discrete Fourier transform.
12. 13. The method of claim 12 wherein each demodulator further comprises an equalisation step.
13. 14. The method of claim 12 wherein each demodulator filters the received signal prior to the discrete Fourier transform.
14. 15. The method of claim 12 in which the demodulating step is carried out in a transceiver.
- 20 15. 16. The method of claim 15 in which each demodulator further performs an echo cancellation step to remove an echo associated with the signal in a transmitter of the transceiver from the received signal.
- 25 16. 17. The method of any one of claims 12 to 16 in which the multi-band signal is generated by nulling selected tones in the modulator.
17. 18. The method of claim 12 in which the multi-band signal is generated by filtering the output of the modulator.

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